



CD28 NULL T LYMPHOCYTES ARE EXPANDED IN YOUNG WOMEN WITH POLYCYSTIC OVARY SYNDROME

ACC Poster Contributions

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Background: Young women affected by polycystic ovary syndrome (PCOs) have been found to have an increased risk of cardiovascular (CV) disease. Insulin resistance, metabolic syndrome and raised C-reactive protein (CRP) levels may contribute to this risk; however, other mechanisms might be involved. Of note, the expansion CD4+CD28null T cells, an unusual aggressive T lymphocyte population able to produce large amount of INF-gamma, has been recently associated with recurrent instability in patients with acute coronary syndromes. We tested the hypothesis that an expansion of CD4+CD28null T cells is present in young women affected by PCO.

Methods: Peripheral blood T cells from 30 PCOs women with normal insulin sensitivity (age 25±5) (G1), 30 PCOs women with insulin resistance (age 25±5) (G2) and 23 healthy women (age 30±6) (G3) were analyzed for the distribution of T cell subsets by flow cytometry and CD4+CD28null T cell frequency was compared among the three groups. CRP serum levels were assessed by a high sensitivity nephelometric assay and compared among the three groups. Predictors of CD4+CD28null T cells frequency were assessed among demographic, clinical data, cardiovascular risk factors and laboratory data, including lipid-glycemic profile, androgen levels and finally CRP levels.

Results: CD4+CD28null cell frequency was significantly higher in G1 (2.7, 1.2-4) and in G2 (2.5, 1.2-5) than G3 (0.2, 0.1-0.9; Bonferroni adjusted (Ba)-p<0.001), whereas no significant difference was found between G1 and G2 (Ba-p=1). Conversely, CRP levels were significantly higher in G2 (2.5, 1.2-4.6 mg/L) than in G1 (1.1, 0.8-2.1, Ba-p=0.003) and in G3 (0.8±2.6 mg/L, Ba-p<0.001), with a trend for higher levels in G1 as compared to G3 (Ba-p=0.06). Multiple linear regression analysis showed that PCO status independently predicts CD4+CD28null cell frequency (B=1.9, standard error=2.04, p<0.001).

Conclusion: PCOs women show an expansion of CD4+CD28null T cells. This finding may shed new light on the mechanisms leading to an increased cardiovascular risk in women affected by PCO.